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■ **Snow replies:** I also wish that I had been able to say more about the contribution of neutron measurements to the development of statistical treatments of excited nuclear states and the fruitful random matrix theory ideas that came out of them. They have broad applications in many areas of physics, and I thank Harry Camarda for his letter and references describing that physics.

Camarda's letter also provides the opportunity to highlight a fascinating subsequent development in the field—namely, the amplification of parity-odd effects in compound nuclear resonances. Experiments confirm that parity-odd amplitudes in nucleon–nucleon interactions are amplified by several orders of magnitude at certain *p*-wave resonances in heavy nuclei populated by eV to keV energy neutrons.[1] Random matrix theory has been used successfully to analyze the width of the distribution of those parity-odd asymmetries, since part of the amplification mechanism can be traced to the chaotic nature of the nuclear states involved.[2]

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# Femtosecond currents via the dynamic Stark effect

The Search and Discovery report titled "An electrical insulator turns metallic within a femtosecond" (PHYSICS TODAY, February 2013, page 13) is a compelling account of the recent breakthrough experiments on dynamic Stark effects performed by Ferenc Krausz and collaborators. It describes how a strong nonresonant 4-fs laser pulse can be used to generate electric currents along a nanojunction on a femtosecond time scale. Phenomenologically, the current arises from the nonlinear interaction of the active material in the silica glass nanojunction with an incident laser pulse of low temporal symmetry. By varying the degree of time asymmetry of the laser, one can change the sign and magnitude of the photoinduced current. Microscopically, the underlying rectification mechanism of that rather spectacular effect is Stark shifts so large that they can dramatically modify the electronic structure of the silica glass and even bridge its large energy gap.

Significantly, and in a broader context, the groundbreaking experiment by Krausz and coworkers falls into a class of symmetry-breaking laser-control scenarios known to induce net currents in spatially symmetric systems through laser fields of low temporal symmetry.[1] The idea of using Stark effects as the main microscopic mechanism for the production of currents arose in an earlier theoretical proposal to use Stark effects to bridge the energy gap of a semiconducting material.[2] The experiments demonstrate how such ideas can be applied to induce currents in a material with an energy gap as large as 9 eV.

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